

ICNIRP Measurement Report

This report presents the results of measurements of electromagnetic field emission levels in the vicinity of mobile base stations. Results are presented as percentages of the power density reference levels for general public exposure in the 1998 edition of the Guidelines published by the International Commission on Non-Ionizing Radiation Protection (ICNIRP)¹, with figures provided for individual frequency bands used for base station (downlink) transmissions as well as an overall figure for all other frequency bands between 30 MHz to 6 GHz. The total percentage equals the sum of all individual percentages.

The power density reference levels in the ICNIRP Guidelines are the root mean square (rms) values averaged over six minutes. In this report, we have measured the average E-field strength over a six-minute period in each measurement location.

We have applied a measurement threshold of 3dB above the system noise floor² of the measurement equipment, below which any E-field strength levels measured are deemed not sufficiently above the system noise floor to be valid. In the results tables below, measurement results are shown to a precision of four decimal places. Results which are not sufficiently above the system noise floor to record as a valid measurement are shown as a dash (-). Results which are too small to register to four decimal places are shown as 0.0000%.

Date of Survey:	07/01/2025	Time Survey completed:	13:11
Survey address:	Cirencester GL7		

Measurement equipment		Serial number	Calibration Date
Meter	Keysight Fieldfox N9915A Spectrum Analyser	MY56072611	23/01/2024
Probe	Agos Aria-6000 Antenna	1117	28/11/2022
Cabling	1.7m cable	1319	28/11/2022

¹ <https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf>

² The noise floor of the measurement equipment is the level of background noise that is present before detecting any external signals. In other words, it indicates the absolute minimum level of detectable signals.

Broadcast bands covered by this report

Frequency Band	Frequency Range	Technology*
	87.5-108 MHz	FM Radio
	174-230 MHz	DAB
	470-694 MHz	Digital TV

Mobile bands covered by this report

Frequency Band	Frequency Range	Technology*
700 MHz	738-788 MHz	4G, 5G
800 MHz	791-821 MHz	4G
900 MHz	925-960 MHz	2G, 3G, 4G
1400 MHz	1452-1492 MHz	4G (Supplementary downlink)
1800 MHz	1805-1880 MHz	2G, 4G
1900 MHz	1900-1920 MHz	4G
2100 MHz	2110-2170 MHz	3G, 4G
2300 MHz	2350-2390 MHz	4G
2600 MHz TDD	2570-2620 MHz	4G
2600 MHz FDD	2620-2690 MHz	4G
3.4 GHz	3410-3680 MHz	5G, 4G
3.8 GHz	3680-4200 MHz	Various
Others**		

** This is an indication of the type of technologies typically deployed in these bands; not all frequency bands and technologies may be in use at all locations. ** All other frequencies between 30 MHz and 6 GHz.*

Survey locations

The survey was conducted within the area shown in the map below. Measurements were taken at six locations and are presented in the following pages of this report.



Location 1

Measurement time:	12:10
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00755
174-230 MHz	0.00847
470-694 MHz	0.00690
700 MHz	0.00092
800 MHz	0.00382
900 MHz	0.00479
1400 MHz	0.00035
1800 MHz	0.00356
1900 MHz	0.00016
2100 MHz	0.00452
2300 MHz	0.00031
2600 MHz TDD	0.00026
2600 MHz FDD	0.00014
3.4 GHz	0.00163
3.8 GHz	0.00369
Others	0.11306
Total	0.16014

Location 2

Measurement time:	12:18
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00780
174-230 MHz	0.00894
470-694 MHz	0.00715
700 MHz	0.00097
800 MHz	0.01374
900 MHz	0.01374
1400 MHz	0.00036
1800 MHz	0.00370
1900 MHz	0.00016
2100 MHz	0.00745
2300 MHz	0.00032
2600 MHz TDD	0.00027
2600 MHz FDD	0.00015
3.4 GHz	0.00172
3.8 GHz	0.00393
Others	0.11857
Total	0.18899

Location 3

Measurement time:	12:28
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00798
174-230 MHz	0.00914
470-694 MHz	0.00737
700 MHz	0.00098
800 MHz	0.00061
900 MHz	0.00059
1400 MHz	0.00037
1800 MHz	0.00231
1900 MHz	0.00017
2100 MHz	0.00180
2300 MHz	0.00034
2600 MHz TDD	0.00029
2600 MHz FDD	0.00016
3.4 GHz	0.00180
3.8 GHz	0.00415
Others	0.12367
Total	0.16171

Location 4

Measurement time:	12:39
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00815
174-230 MHz	0.00949
470-694 MHz	0.00757
700 MHz	0.00102
800 MHz	0.00080
900 MHz	0.00075
1400 MHz	0.00039
1800 MHz	0.00166
1900 MHz	0.00018
2100 MHz	0.00071
2300 MHz	0.00034
2600 MHz TDD	0.00030
2600 MHz FDD	0.00016
3.4 GHz	0.00188
3.8 GHz	0.00429
Others	0.12755
Total	0.16523

Location 5

Measurement time:	12:50
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00856
174-230 MHz	0.00966
470-694 MHz	0.00774
700 MHz	0.00103
800 MHz	0.00068
900 MHz	0.00067
1400 MHz	0.00038
1800 MHz	0.00302
1900 MHz	0.00019
2100 MHz	0.00074
2300 MHz	0.00036
2600 MHz TDD	0.00030
2600 MHz FDD	0.00017
3.4 GHz	0.00195
3.8 GHz	0.00447
Others	0.13168
Total	0.17159

Location 6

Measurement time:	13:05
Frequency band	Percentage of the ICNIRP reference levels for general public exposure
87.5-108 MHz	0.00562
174-230 MHz	0.00629
470-694 MHz	0.00508
700 MHz	0.00066
800 MHz	0.00291
900 MHz	0.00409
1400 MHz	0.00025
1800 MHz	0.00225
1900 MHz	0.00012
2100 MHz	0.00266
2300 MHz	0.00023
2600 MHz TDD	0.00019
2600 MHz FDD	0.00011
3.4 GHz	0.00125
3.8 GHz	0.00291
Others	0.08565
Total	0.12027

Disclaimer: The results detailed in this report apply only to the tests made at the reported time, using the test equipment detailed. They do not indicate that on another date an identical set of results would be achieved, due to changes in local environmental conditions or other factors which may or may not have an effect on the measurement results obtained at that future time.